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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,806	12/23/1999	MARTA M RAMBAUD		7978

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EXAMINER

BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/471,806

**Applicant(s)**

RAMBAUD ET AL.

**Examiner**

Emmanuel Bayard

**Art Unit**

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. OK

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-16,18-24 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-16,18-24 and 26-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is in response to amendment filed on 11/16/04 in which claims 1, 4-16, 17-24 and 26-30 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-5, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peyla et al U.S. Patent No 6,539,063 in view of Mathe U.S. Patent No 6,389,069 B1.

As per claim 1, Peyla et al teaches a programmable infinite impulse response filter (see fig.5 element 104 and col.2, lines 44-50) to implement any of a plurality of transfer functions (see figs.4-5 elements 215,330U, 330L and col.14, lines 5-20 and col.17, lines 60-67); a filter selector (see figs.4-5 elements 245, 335U, 335L, 390 and col.14, lines 45-54 and col.17, lines 60- 67) to select any one of said plurality of infinite impulse response filter transfer functions for said programmable infinite impulse response filter (element 104).

However Peyla et al does not explicitly shows a FIR for receiving an output of an infinite impulse response as input where said digital equalizer at least one of corrects and equalizes impairments caused in a high transmission signal.

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Mathe teaches a finite impulse response digital filter for receiving an output from an infinite impulse filter as input (see fig.1 element 20 and col.5, lines 58-67) where said digital equalizer at least one of corrects and equalizes impairments caused in a high transmission signal (see col.2, lines 38-45 and col.5, lines 26-30 and col.10, lines 4-10).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Mathe into Peyla as to remove any DC offsets present in the gain adjusted baseband signals as taught by Mathe (see col.10, lines 5-8).

As per claims 4 and 5, Peyla and Mathe in combination would teach said FIR digital filter adapts a transfer function to best fit an input data as to effect variable delays, in order to accomplish re-sampling by estimating signal values at desired times between input samples.

As per claims 11-13, Peyla and Mathe in combination would teach selection of plurality of any one of at least four sets of coefficients available to said FIR as to effect variable delays, in order to accomplish re-sampling by estimating signal values at desired times between input samples.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peyla et al U.S. Patent No 6,539,063 in view of Mathe U.S. Patent No 6,389,069 B1 and in further view of Boyd et al U.S. Patent No 6,438,162 B1.

As per claim 6, Peyla and Mathe in combination disclose all the features of the claimed invention except a T1 communication path and an E1 communication path.

Boyd et al teaches a digital filter having a T1 communication path and an E1 communication path (see abstract and col.2, line 35).

It would have been obvious to one of ordinary skill in the art to implement the aT1 communication path and an E1 communication path of Boyd into Peyla and Mathe combination so minimal configuration by the user could be implemented while using high-speed applications.

As per claims 7-8, the equalizer of Boyd does include twisted pair or coaxial cable (see fig.1 element 1 and col.3, lines 21, 51,). Furthermore implementing such cable into Peyla and Mathe would have been obvious to one skilled in the art as to provide output signal, which ideally has a waveform identical to that originally transmitted.

As per claim 9, the communication path of Peyla would include a wireless medium so that any digital coded signal could be accurately equalized over free space.

As per claim 10, Peyla teaches an analog to digital converter (see fig.5 element 295). Furthermore implementing such digital converter to received T1/E1 signal would have been obvious to one skilled in the art as to generate a signal having a desired sampling rate from an input signal.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-16, 18-24 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peyla et al U.S. Patent No 6,539,063 in view of Mathe U.S. Patent No 6,389,069 B1 and in further view of Simmons et al U.S. Patent No 6,195,414 B1.

As per claims 14 and 24, Peyla et al disclose a method of digitally equalizing a received data signal comprising: firstly filtering said received data signal using an infinite impulse response digital filter (see figs.4-5 elements 215,330U, 330L and col.14, lines 5-20 and col.17, lines 60-67); adaptively adjusting an output of said infinite impulse response digital filter (see col.2, lines 43-53).

However Peyla does teach an adjustment process to accurately match an inverse response of a transmission channel used to transmit said received data signal.

Mathe teaches an FIR as an adjustment process to accurately match an inverse response of a transmission channel used to transmit said received data signal (see fig.1 element 20 and col.5, lines 58-67 and col.10, lines 16-17).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Mathe into Peyla as to remove any DC offsets present in the gain adjusted baseband signals as taught by Mathe (see col.10, lines 5-8).

However Peyla and Mathe in combination do not teach filtering said received **T1/E1**.

Simmons teaches said received **T1/E1** (see fig.3 element 340 and col.5, line 53 and col.6, line 46)).

It would have been obvious to implement the teaching of Simmons into Peyla and Mathe as to pass digital bit stream through digital interface, which suitably interfaces to a particular source of the bit stream.

As per claim 15, the system of Peyla would include detecting a periodic pattern of said received T1/E1 as to accurately provide gain correction to the digital equalization circuit.

As per claim 16, the system of Peyla would include freezing said adaptive adjustment to accurately provide gain correction to the digital equalization circuit.

As per claims 18 and 26 Peyla does teach (selects and implements) (see figs.4-5 elements 245, 390) one of a plurality of transfer function coefficient available for said digital filter.

As per claim 19, it would have obvious to one skill in the art to implement the step of setting an initial value to said plurality of transfer function into Peyla and Mathe as to enhance the system capability to accurately compensate the digitalized signal in the equalizer.

As per claims 20, 21 and 27, the system of Peyla and Mathe in combination would teach said secondary filter is an FIR as to remove any DC offsets present in the gain adjusted baseband signals as taught by Mathe (see col.10, lines 5-8).

As per claim 22, the system of Peyla would include adaptively adjusting coefficients for said finite impulse response to accurately provide gain correction to the digital equalization as to remove any DC offsets present in the gain adjusted baseband signals as taught by Mathe (see col.10, lines 5-8).

As per claim 23, the system of Peyla would include a least mean square algorithm as to provide the best mean square fit to a compensated frequency response which is flat to obtain the distance feeling similar to the desired impulse response.

As per claims 28 and 29 the system of Peyla and Mathe in combination would teach said secondary filter is an FIR as to remove any DC offsets present in the gain adjusted baseband signals as taught by Mathe (see col.10, lines 5-8).

As per claim 30, the system of Peyla would include a least mean square algorithm to provide the best mean square fit to a compensated frequency response which is flat to obtain the distance feeling similar to the desired impulse response.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Strolle et al U.S. Patent No 5,872,815 teaches an apparatus for generating timing signal.



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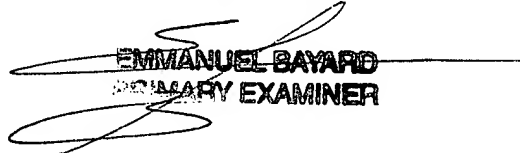
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/20/05

Emmanuel Bayard  
Primary Examiner  
Art Unit 2631

  
EMMANUEL BAYARD  
PRIMARY EXAMINER